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pectoral region of vertebrates contains an account of the bones, nerves, and muscles of the breast, shoulder, and wings of birds. In addition to the admirably clear descriptions of the anatomy of these organs, this part is of special interest in that it contains a full discussion of the systematic relations of the orders and families of birds as well as an account of the relations of birds to other vertebrates. The diphyletic origin of the birds as represented by the Ratitæ and Carinatae is regarded as an untenable assumption by Fürbringer, who argues for the racial unity of the whole group. From this standpoint the Ratitæ represent either a primitive stock from which the Carinatae have sprung or, as Fürbringer believes, a degenerate assemblage derived from the Carinatae. The author further believes that birds have had their origin from none of the known orders of reptiles, but from an ancient stock among the very oldest reptiles and of which at present no remains are known. p.

Spiders of the United States.¹—As the title indicates, this book was written to meet a popular need. The first part, which is given up to a short introduction on structure, collecting, and habits, might very well have been enlarged. The remainder of the book is taken up by a systematic account of spiders.

About two hundred of the common species of the eastern United States are described. The descriptions are short, often very short. The illustrations are excellent. Each species has one and often four figures to show the characteristic parts and markings. The common round web species that are found in similar places are described together. The photographs of the webs are especially good, and from them the whole process of web making can be followed.

The value of the book would have been increased for amateurs by reference to a few of the popular books on spiders, and for more advanced readers by the authorities of the species.

BOTANY.

The Yuccæ.²—At a time when systematic activity is preponderatingly segregative and the tendency to publish species separately

¹ Emerton, James H. *The Common Spiders of the United States*. Boston, Ginn & Co., 1902. 8vo, xviii + 225 pp., 501 figs.

² Trelease, William. *Thirteenth Annual Report of the Missouri Botanical Garden*, July, 1902.

has become excessive, every piece of monographic work based upon prolonged study of a particular group and passing mature and connected judgment upon all its species is a welcome addition to scientific literature. This is especially true of Professor Trelease's work on the Yuccæ from the fact that it treats a group of natural difficulty, in which, as in the case of the palms, cycads, Cactaceæ, and other large and succulent plants, ordinary herbarium methods are least effective and must to a great extent be supplemented by the slower and far more difficult process of visiting the growing plants in their native habitats or cultivating fresh material. The paper under consideration is an octavo of 133 pages, copiously and excellently illustrated by 100 plates, the latter being chiefly halftones from photographs. The work presents "the principal conclusions reached in an intermittent herbarium, garden, and field study extending over the last sixteen years, in the course of which nearly all of the spontaneous species have been examined and photographed in their native homes."

The author divides the Yuccæ into five genera. The genus *Yucca* is confined to those species which possess globose or broadly campanulate flowers with a thin polyphyllous perianth and a short thick or obsolete style. From *Yucca*, which includes twenty-seven species and may be regarded as the central and typical genus of the group, *Hesperaloe*, with two species, is distinguished by its narrow perianth, *Hesperoyucca* (monotypic) by its filiform style, *Clistoyucca* (monotypic) by its thickened perianth, and *Samuela*, with two species, by its gamophyllous perianth. *Yucca* is divided upon the nature of the fruit and seed into three sections: *Chænoyucca* (the filamentosa group), *Heteroyucca* (the gloriosa group), and *Sarcoyucca* (the baccata group).

Under each species and variety exhaustive bibliography and synonymy are given. These cover not merely the botanical treatment of the plants concerned, but also the far more involved and vague horticultural references, and the frequency with which the mark of interrogation accompanies the citation of synonymy is certainly significant. Here an energetic specialist, exceptionally situated for the thorough investigation of his group and engaged in the revision of not over thirty or forty species, finds himself, even after some sixteen years' effort at the elucidation of his group, obliged to use no less than ten question marks in stating the synonymy of a single species. A few of these doubts refer, as might be supposed, to old and vague characterizations published by the earlier authors, who

did not realize the complexity of the genera with which they were dealing; but the majority relate to the botanico-horticultural species and varieties published by authors who are still living. The great indefiniteness which surrounds plants of this sort may well raise the question, whether a botanist who undertakes either voluntarily or at the solicitation of some nurseryman to give a scientific name and botanical description to some cultivated plant of which he knows neither the country, habitat, natural origin, nor degree of permanence, is doing more to advance or to block the progress of botanical classification. Happily this sort of work is relatively rare in America. In Europe, however, some botanists of rather high standing seem ever ready to undertake this, the lowest type of taxonomic activity, especially in the already much abused groups of succulents. Certainly *Yucca* has had its share of such botanico-horticultural treatment, and it is therefore a pleasure to see the genus subjected to a critical and scientific revision based so largely upon study of the plants in their natural state.

It is to be regretted that space was not found in Professor Trelease's monograph for a more complete citation of herbarium specimens, especially those of standard sets, for no feature of monographic work gives more definiteness and permanent influence to a revision, since by fixing uniform standards in reference collections throughout the world it is of the greatest service in bringing about harmony in classification.

The paper closes with a *résumé* of the economic uses, phylogeny, and ecology of the *Yuccææ*. A series of outline maps is also introduced to show the distribution of the forms known to occur in nature.

B. L. R.

The International Catalogue.¹ — The first part of the long-expected Royal Society's catalogue of current botanical literature, though dated in May and with the MSS. completed in January last, did not reach the libraries of this country until the middle of August. Aside from general prefatory matter, this first part contains the well-known classification of botany adopted by the Council, and an alphabetical index to the same, in English, French, German, and Italian, followed by a topographical classification in the same languages. The catalogue proper consists of an authors' catalogue,

¹ *The International Catalogue of Scientific Literature*, first annual issue. M. Botany. Published for the International Council by the Royal Society of London. Vol. i, pt. i. 1902.